

Applicant : Brosnihan et al
Serial No. : 09/342,348
Filed : June 29, 1999
Page : 2 of 7

Attorney's Docket No.: 07043-060002 / B97-065-2

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of fabricating a microelectromechanical system, comprising:

providing a substrate having a device layer including single-crystal silicon, a handle layer and a sacrificial layer between the device layer and the handle layer;

etching a first trench in the device layer-single-crystal silicon;

depositing a dielectric isolation layer in the first trench to form an isolation trench;

after depositing the dielectric isolation layer, etching a second trench in the device layersingle-crystal silicon, the second trench defining a microstructure including a plurality of elements laterally anchored to the isolation trench such that the isolation trench provides electrical isolation for the anchored elements of the microstructure from each other; and

removing a portion of the sacrificial layer, wherein the removed portion entirely undercuts the plurality of laterally anchored elements.

2. (Previously Presented) The method of claim 31 further comprising forming circuitry in the second region of the device layer outside the first region.

3. (Original) The method of claim 2 further comprising depositing an electrical connection over the first trench to connect the microstructure to the circuitry.

4. (Original) The method of claim 1 further comprising depositing a filler material over the isolation layer in the first trench.

Applicant : Brosnihan et al
Serial No. : 09/342,348
Filed : June 29, 1999
Page : 3 of 7

Attorney's Docket No.: 07043-060002 / B97-065-2

5. (Original) The method of claim 1 wherein the isolation layer fills the first trench.

6. (Cancelled)

7. (Previously Presented) The method of claim 1 wherein removing a portion of the sacrificial layer includes releasing the microstructure.

8. (Currently Amended) The method of claim 1 wherein the step of etching the first trench etches ~~through the device layer to expose in the single-crystal silicon exposes the~~ the sacrificial layer.

9. (Previously Presented) The method of claim 1 wherein the step of etching the second trench etches through the device layer to expose the sacrificial layer.

10. (Previously Presented) The method of claim 1 wherein the sacrificial layer includes silicon dioxide.

11. (Original) The method of claim 1 wherein the device layer includes epitaxial silicon.

12. (Original) The method of claim 1 wherein the isolation layer includes silicon nitride.

13-22. (Cancelled)

23. (Previously Presented) The method of claim 1, wherein the step of etching the second trench includes etching a portion of the device layer that abuts the isolation trench.

Applicant : Brosnihan et al
Serial No. : 09/342,348
Filed : June 29, 1999
Page : 4 of 7

Attorney's Docket No.: 07043-060002 / B97-065-2

24. (Cancelled)

25. (Previously Presented) The method of claim 1, wherein the step of etching the second trench includes forming at least one movable element and at least one generally immobile element.

26. (Previously Presented) The method of claim 1, wherein the step of etching the first trench comprises inductively coupled plasma etching.

27. (Previously Presented) The method of claim 1, wherein the step of etching the second trench comprises inductively coupled plasma etching.

28. (Currently Amended) The method of claim 1, wherein removing the removed portion of the sacrificial layer at least partially undercuts the isolation trench.

29. (Previously Presented) The method of claim 1, wherein the first trench surrounds a region of the device layer.

30. (Previously Presented) The method of claim 1, wherein the first trench electrically isolates a first region of the device layer from a second region of the device layer.

31. (Previously Presented) The method of claim 30, wherein the second trench is located in the first region.